



# UNITED STATES PATENT AND TRADEMARK OFFICE

W  
UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
08/928,893	09/12/1997	HEIKKI HEIKKILA	85940/15	1188
26646	7590	04/06/2004	EXAMINER	
KENYON & KENYON ONE BROADWAY NEW YORK, NY 10004			NAFF, DAVID M	
		ART UNIT		PAPER NUMBER
		1651		

DATE MAILED: 04/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	08/928,893	HEIKKILA ET AL.
	Examiner	Art Unit
	David M. Naff	1651

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 08 January 2004.
- 2a) This action is **FINAL**.                                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1, 3, 5-9, 11-13, 15, 16, 19-21 & 23-41 is/are pending in the application.
- 4a) Of the above claim(s) 32-34 is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1,3,5-9,11-13,15,16,19-21,23-31 and 35-41 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. 07/910,133.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
	6) <input type="checkbox"/> Other: _____

**DETAILED ACTION**

The amendment of 1/8/04 amended the specification, amended claims 1, 3, 6, 8, 9, 11, 19, 23, 24, 26, 30 and 31, and added new claims 35-41.

5 The supplemental amendment of 6/24/03 has been entered in the application. The amendment did not reach the application file until after the office action of 8/4/03.

Claims 32-34 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being 10 no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in Paper No. 40 (filed 4/15/02).

Claims examined on the merits are 1, 3, 5-9, 11-13, 15, 16, 19-21, 23-31 and 35-41.

15 The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

***Claim Rejections - 35 USC § 112***

Claims 1, 3, 5-9, 11-13, 15, 16, 19-21, 23-31 and 35-41 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as 20 to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Adequate support is not found in the specification for reciting "at least 22.3 g/l" as the amount of ethanol produced in line 9 of 25 claim 1, and in other independent claims. While Table 1 (page 12) in

Art Unit: 1651

the specification recites "22.3 g/l", this is not adequate support for a range having 22.3 g/l as a lower limit with no upper limit. The specification supports 22.3 g/l as a lower limit of a range only when in combination with the highest amount of g/l alcohol disclosed which 5 is 51.2 g/l in Table 4 (page 21). It is suggested that claim 1 be amended in line 9 by canceling "at least" and after "g/l" inserting -- - to 51.2 g/l ---. The amendment should be made to independent claims 23 and 31 where "at least 22.3 g/l" is recited.

The specification fails to contain adequate support for "at least 10 about 27.1%" in claims 36-38 and "at least about 20.6 g/l" in claims 39-41. The disclosure in the specification (page 13, line 16) of 27.1% is not adequate support for 27.1% as the lower limit of a range requiring "at least about 27.1%". There is adequate support for only 15 the specific value of 27.1%. The disclosure of 20.6 g/l in the specification (Table 1) is adequate support for only this specific value, and is not adequate support for 20.6 g/l being the lower limit of a range reciting "at least about 20.6 g/l". In the table, only one value of 21.2 g/l is higher than 20.6. Other values are lower for the g/l of xylitol.

20 The specification fails to disclose a process having steps as required by claim 31 of partially hydrolyzing a lignocellulose-containing material, extracting the partially hydrolyzed material with water to produce a prehydrolysate containing xylose and extracted mass, fermenting the prehydrolysate to convert xylose to xylitol, 25 chromatographically separating and crystallizing the xylitol, further

Art Unit: 1651

hydrolyzing the extracted mass to produce a hydrolysis product containing 50-300 g/l xylose and glucose, fermenting the hydrolysis product to convert glucose to ethanol and recovering the ethanol by distillation, wherein xylitol is produced and glucose is converted to 5 ethanol to produce at least 22.3 g/l ethanol in the fermentation solution.

The specification (page 9, lines 4-13) only briefly mentions this type of process as an alternative embodiment, and provides only a very general description. Specific details are not provided to enable a 10 process requiring a combination of steps and amounts of xylose and ethanol as claimed. None of the working examples carry out this embodiment.

***Claim Rejections - 35 USC § 112***

Claim 30 is rejected under 35 U.S.C. 112, second paragraph, as 15 being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In line 3 of dependent claim 30, there is not clear antecedent basis for "said hexose in said xylose-containing starting material" since claim 23 does not require hexose in a xylose-containing starting 20 material. Claim 23 instead requires a starting material comprising xylose and glucose. It is suggested that claim 30 be amended in line 3 by canceling "hexose in said xylose-containing", and after "material" inserting --- comprising xylose and glucose ---.

The claims are free of the prior art.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

5 A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the  
10 shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

15 This application contains claims 32-34 drawn to an invention nonelected with traverse in Paper No. 40 (filed 4/15/02). A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

---

Any inquiry concerning this communication or earlier  
20 communications from the examiner should be directed to David M. Naff whose telephone number is 571-272-0920. The examiner can normally be reached on Monday-Friday 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mike Wityshyn can be reached on 571-272-

Art Unit: 1651

0926. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

15



David M. Naff  
Primary Examiner  
Art Unit 1651

20

DMN

4/1/04